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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

Office Action Summary	Application No.	Applicant(s)
	09/930,640	NEL, ANDRE M. E.
	Examiner	Art Unit
	Jonathan G. Sterrett	3623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 August 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Summary

1. This **Final Office Action** is responsive to the amendment of 29 August 2007. Currently Claims 1-24 are pending.

Response to Arguments

2. The applicant's arguments regarding Claims 1-24 have been fully considered and are not persuasive.

3. The applicant argues on page 8 with respect to claim 1 that the mobile carrier entities in the cited reference of Muralidharan are not in fact mobile carrier entities but rather heap data structures.

The examiner respectfully disagrees.

The term "mobile carrier entities" is a very broad term. Since the data objects in Muralidharan represent trucks, the objects that are carrying data representing loading, position and capacity are as much "mobile carrier entities" as is cited in the claims. Furthermore, the term mobile carrier entity is broader than what is disclosed in the specification. The specification discloses ground, rail, air or ship (see page 1 and Figure 1). Ground is disclosed as trucking (the specification on page 6 line 12-15). However, mobile carrier entities could be transportation by individuals (e.g. couriers) on bicycles or other modes of transportation not disclosed in the specification.

4. The applicant argues on page 8 with respect to claim 1 that Muralidharan does not teach computing a projection of future mobile carrier capacity.

The examiner respectfully disagrees.

On page 11 line 13-15, the projection of trailers closed (i.e. full) at various locations is calculated (i.e. a computation of future available capacity) so that empty trailers can be prepositioned.

5. The applicant argues on page 9 with respect to claim 1 that Muralidharan does not teach receiving from a second entity a respective specification for each of one or more freight haulage jobs.

This argument is moot in view of a new grounds of rejection. Please see the 103(a) rejection below.

6. The applicant argues that the fact that Muralidharan teaches using objects to model trailers in a network does not meet the limitation of receiving capacity attributes from a mobile carrier entity on route.

The examiner respectfully disagrees.

This argument ignores the nature of an LTL network (as such as is modeled by Muralidharan). For example, the applicant is referred to this figure from the reference:

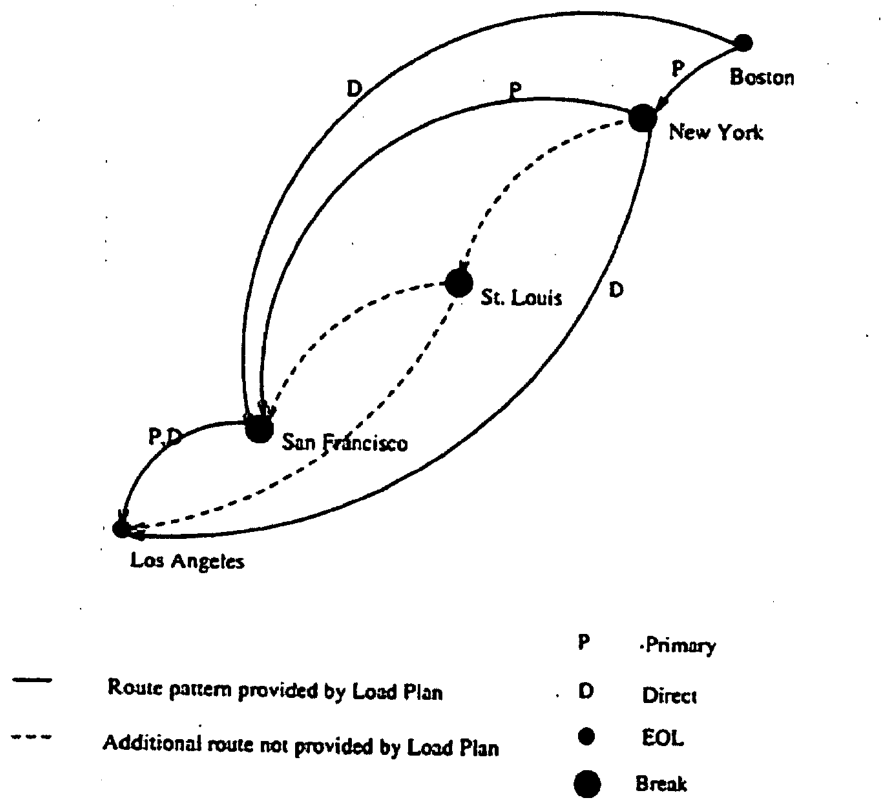

Figure 1.2 Primary and direct load patterns for shipments from Boston to Los Angeles

Between Boston and LA, the LTL network shows a number of "breakbulk" terminals. These terminals are "en route" between Boston and LA (Boston and LA are end of line terminals). A trailer in the model is dropping off some freight at each of these terminals en route to the EOL terminal. At each "breakbulk" terminal, the trailer capacity information is uploaded (i.e. received). Thus the claim limitation of receiving capacity information "en route" is met (see page 3 for a discussion of load drop offs at break bulks and note page 32 line 14-20 where the trailer's load is tracked through the

network, including at the breakbulk terminals shown above).

7. The applicant argues with respect to Claim 8 on page 10 that the objects representing trailers (i.e. the trailer objects) are not mobile carrier entities, but rather "data heaps".

The examiner respectfully disagrees.

Insofar as the "data heaps" as the applicant refers to the trailer objects in Muralidharan's simulation move across a carrier network and contain information that refers to how much freight they are carrying, they are in fact 'mobile carrier entities'.

8. The applicant argues on page 11 with respect to Claim 10 that a user does not input position information and excess capacity information for each mobile carrier entity in a set of freight hauling mobile carrier entities.

The examiner respectfully disagrees.

While the computer simulation does calculate the ongoing freight capacity for the mobile carrier entities in the simulation, the starting point of the simulation does require that the user (i.e. the at least one) input the beginning capacities of the simulation when setting up the simulation,

9. The applicant argues that the cited references fail to teach the limitations of Claim 18 regarding the scanner being operable to obtain scanner attributes, including position information, route information and excess capacity information and to wirelessly

transmit this information according to a wireless communications protocol.

The examiner respectfully disagrees.

The rejection is made over a combination of references. Muralidharan teaches the utilization of position information (i.e. at least in the breakbulk terminals), the route information (note the various routes between the end of line (EOL) terminals), excess capacity information (the cube and weight loading of the truck trailers as they transit the network). Muralidharan teaches using the simulation to predict the impact that various strategies would have on a network. Muralidharan notes that his simulation addresses dynamic load planning (i.e. the state of the various trailers and their capacities changes over time – see page 1 line 8-10 – the system decides where to dispatch the truck based on the current state of the system and the time. The examiner further notes that the current state of the system includes the capacity of the trailer – see pages ix and x – the model includes various threshold capacities at when trailers are to be closed and "K" the capacity of a trailer – a more detailed discussion of the trailer capacity as modeled in the simulation is given on page 32 line 14-19). Thus Muralidharan clearly teaches the need and use of the capacity and route information as cited in Claim 18. Furthermore, the problem that Muralidharan is trying to solve is given on page 1. "The dynamic priority shipment routing problem decides where the consolidation needs to be done **in real-time** to minimize delays to priority shipments and thus reduce penalty costs, **based on the current information available**." Muralidharan notes that dynamic load planning and scheduling is a very complicated problem and that mathematical modeling is not feasible because of the very complex nature of the problem (see page 23 line 15-20).

This is because of the stochastic (i.e. changing nature of the problem because of the statistical variation that occurs with the loads, capacities, routes, travel times, etc. in a logistics network). While Muralidharan mentions that the purpose of the simulation is to forecast a logistics planning approach for the next 24 to 48 hours for a LTL network (see page 24 line 8-10), Muralidharan also notes that with the simulation "**several different scenarios with different parameters** [i.e. the trailer capacity and route information, among others] **can be analyzed for their effect on cost/service in a relatively short period of time**" – Thus the simulation, given real time input of dynamic and changing logistics conditions, can quickly (in a few minutes of running) predict what is going to happen in the logistics network over the subsequent several hours.

Although Muralidharan suggests that the simulation can be used for ad hoc and quick modeling of the simulation network, Muralidharan does not teach obtaining this information on a real time basis.

Leavitt teaches that information about a truck can be obtained through wireless transmission (i.e. over a protocol). Leavitt teaches in page 75 column 1 para 2, that everything about a truck including route and load information can be transmitted wirelessly to provide a real time update of the truck's status. It is optimization of the logistics network to reduce costs and improve customer service through real time modeling that Muralidharan is trying to solve. As noted above, Muralidharan's model predicts logistics network performance (i.e. future load and position status of trailers) quickly based on information that is real time in nature. One of ordinary skill in the art at the time of the invention would obtain the load and position information taught by Leavitt

that is obtained wireless as a real time input to Muralidharan's model to quickly predict the impact that the dynamic real world information from Leavitt's teachings would have on the simulation model taught by Muralidharan.

In addition, as discussed in the KSR International Co. v. Teleflex Inc. et al., 550 U.S. ____(2007), "[o]ften, it will be necessary for a court to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue. To facilitate review, this analysis should be made explicit. See In re Kahn, 441 F. 3d 977, 988 (CA Fed. 2006) ('[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness'). As our precedents make clear, however, the analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ" (emphasis added).

A person of ordinary skill in the art would input the route and position information from Leavitt's teachings into Muralidharan because it would enable real time modeling of a logistics network (where this logisitics network utilized detailed, real time capacity and route information) to quickly predict the impact that dynamic changing conditions in the trailers in a logistics network would have on future performance in terms of cost and

delivery service.

On page 14 the applicant disparages the input of real time capacity and route information into Muralidharan because the simulation calculates these things as the simulation is running. However, what the applicant fails to point out is that there are several stochastic (i.e. probabilistic values) in Muralidharan (e.g. see page x – note that there is a probability that shipments will need to be transferred from one trailer to another). The implication of the probabilistic variables in Muralidharan regarding trailer capacity means that the simulated trailer capacity (and it's position) may and will differ from what happens in the real world. Because of the statistical nature of the simulation, Muralidharan mentions the need to 'calibrate' the model to ensure it models what is happening in the real world – note page 34 line 5-10, the load of the trailers upon closing is compared to real world stats). Thus a real world update of the logistics route and capacity information as provided by Leavitt would further improve the model by giving a real-time snapshot of what is actually happening in the logistics network. One of ordinary skill in the art would recognize the benefit of having real-time information as provided by Leavitt.

10. The applicant argues with respect to claim 21 on page 16 that as per the argument above that there is no need to prompt the user for information.

The examiner respectfully disagrees.

As discussed above, the simulation would benefit from the input of real time information, because of (1) the fast computing time of the simulation to predict what is

going to happen in the near future (next 12 to 24 hours), (2) the dynamic nature of the real world scheduling problem posed by an LTL framework, and (3) the stochastic (i.e. statistical) nature of the characteristics (i.e. loads, capacities, location information) of a logistics network. One of ordinary skill in the art would prompt a trucker to enter this information to improve the scheduling and planning information because of the predictable result of having the real time information to improve cost and customer service.

11. The applicant argues on page 16 with respect to Claim 23 that the cited reference fails to teach receiving haulage rates from ones of the mobile carrier entities, where the selecting is based on the haulage rates.

The examiner respectfully disagrees.

On page 32 line 32 it is noted that the trailer capacity is a determining factor in the input into the model. The capacity of a full or partially full trailer is a "haulage rate", because it implies how much cargo (i.e. a rate) that the trailer can carry. (in the argument the applicant cites "immobile", however, the claim recites mobile – the examiner assumes the applicant meant to say "mobile").

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

13. **Claims 1-17** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Muralidharan**, B; "Dynamic Routing and Service Network Design for less-than-truckload (LTL) Motor Carriers", 1997, Iowa State University, Ames, Iowa, PhD Dissertation, pp.1-94. (hereinafter **Muralidharan**)

Regarding **Claim 1**, Muralidharan teaches:

A computer-implemented method of allocating freight-haulage jobs

Page 23 line 1-5, a decision support tool (i.e. a computer implemented method) provides a way for LTL managers to plan a network (i.e. allocate freight haulage jobs in the LTL network).

receiving from one or more users respective capacity attributes, including position information, route information and excess capacity information specifying available freight-hauling capacity, for each mobile carrier entity in a set of freight-hauling mobile carrier entities;

page 32 para 3.3, the trailer object in the computer simulation (i.e. each trailer is a mobile carrier entity since it represents the individual carriers in a LTL network used for hauling freight) contains excess capacity information (i.e. the total volume in the trailer object), position information (trailer origin and destination are position information in the trailer object) and route information (page 30 para 3.2.5, routes for the trailers are broken down into categories, opportunistic direct service, primary service and direct

service – see Figure 3.1 for examples of the routes for a trailer between Boston and Los Angelese).

computing a projection of available carrier capacity based upon the received mobile carrier capacity attributes; and

page 34 lines 12-18, the calibration of the simulation computes a projection of available carrier capacity (the number of trailers that shipped based on the inputs to the simulation are available carriers since all available trailers loaded were shipped). The calibration of the simulation takes into account the individual trailer capacity, trailer routing and position information to determine throughput through the LTL network. – see also page 24 line 8-11 and line 18-20.

identifying one or more freight haulage job candidates from the set of mobile carrier entities based upon the computed projection of available carrier capacity and shipping attributes for each of a set of freight haulage jobs.

Page 32 para 3.2.6, the model identifies the trailers dispatched and those that are open (i.e. have capacity for additional freight) from all the trailers that were dispatched (i.e. from the set of mobile carrier entities) – this is based upon the simulation running for all the trailers and the associated shipments for each of a set of bills that are shipped over the LTL network (i.e. for each of a set of freight haulage jobs). – seel also page 24 line 8-11, the purpose of the model is to forecast where there is going to be empty trailers in the future in an LTL network.

Muralidharan does not teach where the position information used for each LTL

trailer is GPS position information. The network assumes that trailer travel time between terminals is fixed. Muralidharan does teach that there is a need to provide real time tracking (i.e. position information) for trucks in an LTL network based on input from GPS systems, because the advent of the GPS technology has made it readily available to know where vehicles are in real time. Muralidharan teaches there is a need to account for real time GPS into modeling because of the dynamic nature of the operation of LTL networks (see page 1 line 1-8).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Muralidharan regarding simulating an LTL network using capacity and position information for trailers in the network, to include where the position information includes GPS position information, because it would improve transportation planning by taking into account the dynamic nature of shipping over an LTL network.

Muralidharan teaches the operation of a simulation network that is designed to help LTL carriers optimize their operations. As part of the scenarios examined Muralidharan teaches the need to perform dynamic load planning.

2

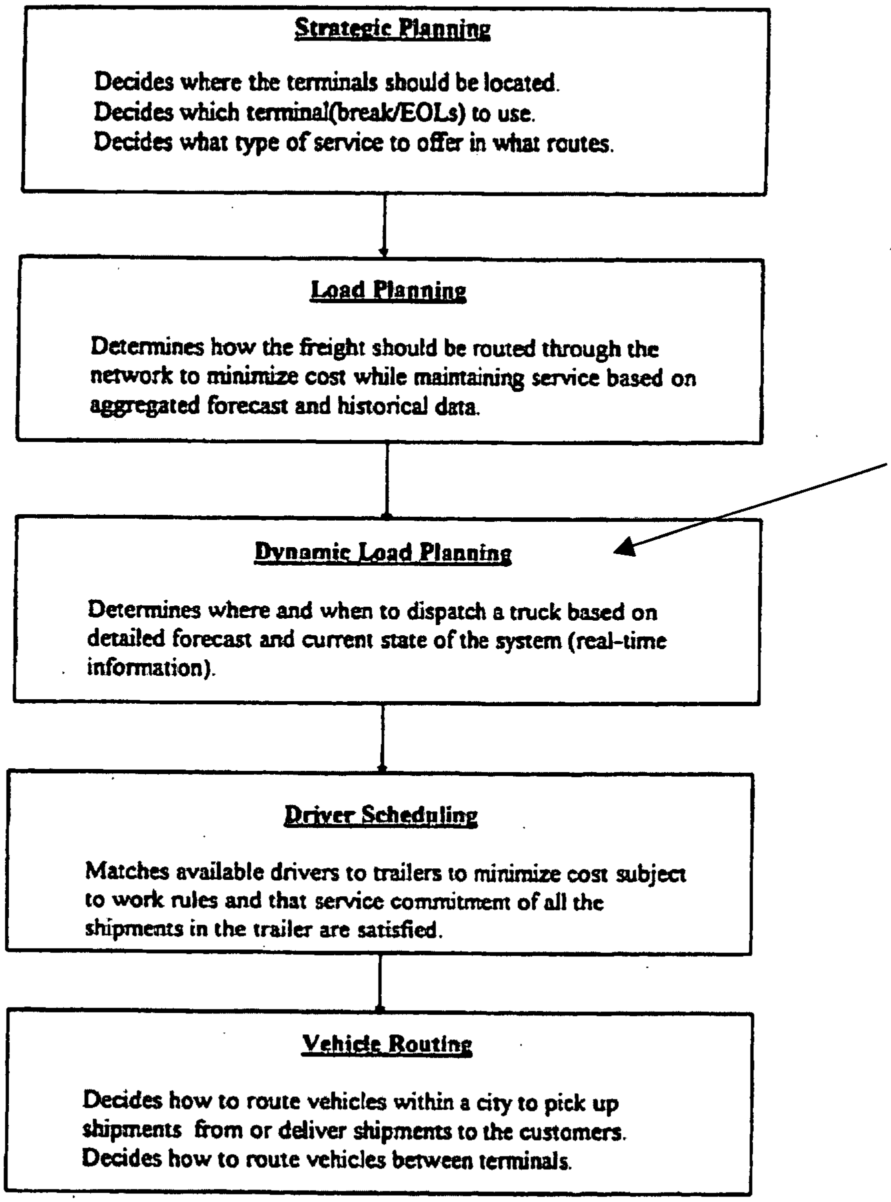

Figure 1.1 Hierarchy of LTL network research problems

Part of the real time information taught is that of the vehicle capacity (see page 32). The goal of the simulation is to optimize an LTL (less than truckload) network and to forecast when and where capacity is needed (see page 23 "This forecasting tool can

help the LTL carrier in determining how many drivers and empty trailers are needed in the next 24 to 48 hours).

Muralidharan shows two different networks illustrations:

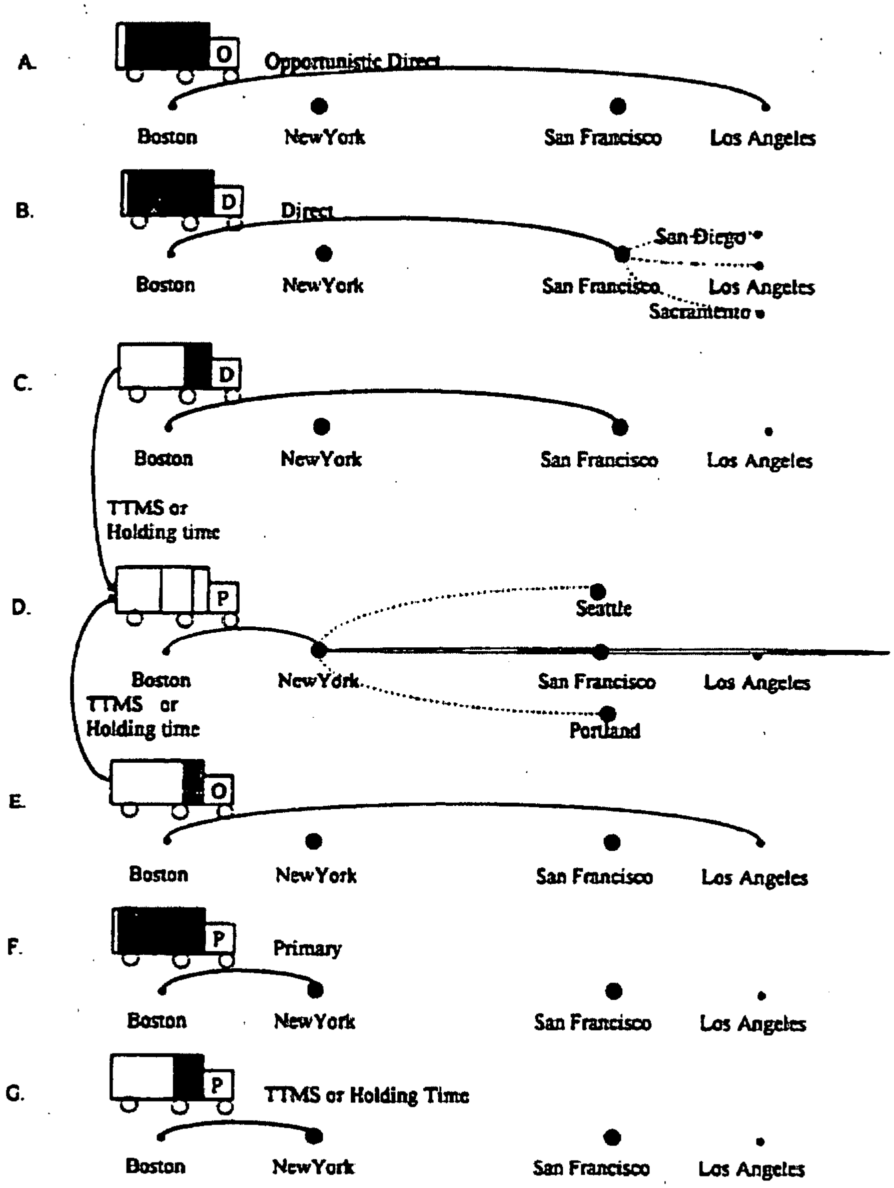

Figure 3.1 Example to describe the simulation model

This first (Figure 3.1) shows how various trucks (full or partially loaded) can model the transit from Boston to New York. Page 24 line 10 teaches that for each terminal, the number of trailers is forecast.

Muralidharan teaches that although this is a simulation, it is designed (and measured against a real world model – that of an LTL network (see page 35 where it is noted that the model was calibrated to be accurate against real world logistics network metrics).

Muralidharan does not teach receiving shipment information from a second entity and transmitting to the second entity a notification of one or more matching carrier entities.

Official Notice is taken that it is old and well known in the art of LTL networks to transmit and receive information regarding shipments to be made and available capacity to meet those shipments. For example customers contact LTL networks to schedule loads and to receive information regarding the availability of trucks to carry their shipments.

It would have been obvious to one of ordinary skill in the art at the time of the invention to receive information from a second entity regarding shipments and to transmit at least one matching mobile carriers to handle a customers load, because it would provide a predictable result by receiving and transmitting the information

regarding shipments on an LTL network to a customer who is using the network. This modification of Muralidharan would improve customer satisfaction and would be a reasonable modification to these teachings since the LTL network as taught by Muralidharan is carrying freight for customers and Muralidharan's approach is designed to improve customer service.

Regarding **Claim 2**, Muralidharan teaches:

wherein the computing estimating future positions of one or more of the mobile carrier entities.

Page 11 line 13-15, the future positions of the closed trailers (i.e. those that will be full) is estimated in the next 24 to 48 hours so that other trailers can be moved into place to provide the needed capacity.

Regarding **Claim 3**, Muralidharan teaches:

wherein the estimating comprises estimating future positions of one or more of the mobile carrier entities at one or more times within pickup time windows specified for each of the freight haulage jobs.

Page 15 line 1-3, the model predicts the number of trailers at the various terminals (i.e. positions) that will be closed (i.e. fully loaded according to the time window constraints specified on page 28 line 1-20. The pickup time window is forecasted as per page 33 line 10-12 as the time a trailer can wait for freight bills before

being closed.

Regarding **Claim 4**, Muralidharan teaches:

Wherein the estimating comprises estimating future positions of one or more of the mobile carrier entities based at least in part upon current transport condition information.

Page 32 line 17-20, the future position of a trailer, based on when it leaves the terminal to meet service requirements (i.e. transport condition information) is estimated by the simulation.

Regarding **Claim 5**, Muralidharan teaches:

wherein the determining comprises identifying the matching ones of the mobile carrier entities based at least in part upon the proximity of the estimated mobile carrier entity positions to pickup locations specified for each of the freight haulage jobs.

Page 32 line 20, the bills (i.e. representing the LTL freight haulage jobs) have origins where they are picked up. – line 15, the trailers used to transport these bills are identified both based on their origin and their location (i.e. proximity) at any of the terminals between origin and destination (see page 30 line 1-5, opportunistic direct service is based on the trailer being located such that it can pick up bills enroute).

Regarding **Claim 6**, Muralidharan teaches:

wherein the received excess capacity information includes amount of available capacity and mode of transport.

Page 32 line 15-20, each trailer has a certain amount of available capacity, based on the loads it is carrying – for this simulation the mode of transport is LTL trailers.

Regarding **Claim 7**, Muralidharan teaches:

wherein the determining comprises identifying the matching ones of the mobile carrier entities based at least in part upon a comparison of the received excess capacity information and an amount of needed capacity and mode of transport specified for each of the freight haulage jobs.

Page 29, line 9-13, trailers are identified based on the excess capacity information and the amount of capacity needed for the bills to be shipped – note the discussion on page 32 line 14-19 of the trailer objects (each trailer is modeled as an object with a weight and volume capacity) and the bill objects (the freight haulage jobs, where each bill represents a weight and volume required to be shipped according to LTL, the mode of transport).

Regarding **Claim 8**, Muralidharan teaches:

computing an amount of capacity available on a given one of the mobile carrier entities based upon excess capacity information received from the given mobile carrier entity.

Page 29 line 9-13, capacity available is computed based on the excess capacity information received from the trailer object – see page 32 line 14-18, the trailer object contains what bills (i.e. freight) the trailer is carrying and what the available capacity is.

Regarding **Claim 9**, Muralidharan teaches:

wherein the excess capacity information received from the given mobile carrier entity haulable by the given mobile carrier entity and volume information and weight for each item of freight being hauled by the given mobile carrier entity.

Page 32 line 14-19, each trailer object provides information for the bills (i.e. the LTL pieces of freight the trailer is carrying) that includes what the weight and volume of the bills are and the total weight and volume carried in the trailer.

Muralidharan does not teach receiving from the mobile carrier entity (i.e. the trailer object what the maximum volume information and maximum weight of the trailer is, because Muralidharan assumes that each trailer has the same load and volume capacity.

However it would be obvious to one of ordinary skill in the art at the time of the invention to include for each of the trailer objects in the simulation a maximum weight and volume because it is old and well known in the art that there are different sizes of trailers used in LTL freight transport and this would accurately account for the size and

weight of those different size trailers in the simulation.

Claims 10-17 recite similar limitations as those recited in **Claims 1-9** above, and are therefore rejected under the same rationale.

14. **Claims 18-24** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Muralidharan** in view of Leavitt, Wendy; "All Work and Play", Nov 2000, Fleet Owner, 95, 11; ABI/INFORM Global, p.75 (hereinafter **Leavitt**).

Regarding **Claim 18**, Muralidharan teaches receiving from a mobile carrier entity (i.e. trailers) capacity attributes including position information, route information and excess capacity information, for a mobile carrier entity (i.e. a trailer) as discussed above for Claim 1.

Muralidharan suggests that advances in technologies provide real time information from mobile carrier entities including GPS positioning information (see page 1 line 1-5).

Muralidharan teaches the use of GPS systems and real time information will improve shipment consolidation and help truck carriers optimize their distribution networks in terms of cost. Muralidharan utilizes the specific weight and volume capacity from an individual truck to determine if that truck can carry a particular freight haulage

job.

Muralidharan suggests the advantages in optimizing freight networks using advanced technology but does not teach:

A portable device, comprising: a portable housing incorporating a display screen and one or more control buttons; a memory in the housing; a wireless transceiver in the housing; a positioner in the housing and operable to compute position information; a scanner in the housing and operable to direct a light beam at a symbol and to recover information embedded in the symbol based upon detected reflections from the symbol; and a controller in the housing and coupled to the memory, the wireless transceiver, the positioner, and the scanner and operable to obtain from the scanner capacity attributes, and to control wireless transmission of the capacity attributes through the wireless transceiver in accordance with a mobile wireless communication protocol.

Leavit teaches:

A portable device, comprising:

a portable housing incorporating a display screen and one or more control buttons;

page 76 column 1 para 1, the truck productivity computer contains a display and numerous interfaces (column 2 para 2), e.g. a handheld computer contains at least one control button (i.e. a keyboard).

a memory in the housing;

page 76, column 1 para 1, the truck productivity computer is running Windows CE in its memory (i.e. in the housing).

a wireless transceiver in the housing;

page 76 column 1 para 1, the truck productivity computer contains a communications interface to interact with (column 2 para 1) Qualcomms satellite network using a cellular communications protocol (CDPD) using a modem (i.e. a wireless transceiver).

a positioner in the housing and operable to compute position information;

page 76 column 1 para 1, GPS is a positioner that computes position information.

a scanner in the housing and operable to direct a light beam at a symbol and to recover information embedded in the symbol based upon detected reflections from the symbol;

page 76 column 2 para 2, the truck productivity computer can interface with a bar code scanner (i.e. which recovers information embedded in a bar code symbol based upon detected reflections from the symbol).

and a controller in the housing and coupled to the memory, the wireless transceiver, the positioner, and the scanner and operable to obtain from the scanner capacity attributes, and to control wireless transmission of the capacity attributes through the wireless transceiver in accordance with a mobile wireless communication protocol.

Page 76 column 2 para 2, 3; the modem communication is according to a mobile wireless communication protocol (i.e. CDPD or CDMA). The truck productivity

computer is coupled to the memory, the modem (i.e. the transceiver) and the bar code scanner and can perform a multiplicity of functions including (page 76 column 3 para 1) transmitting position information and downloading and transmitting information (i.e. capacity attributes) from bar code scanners.

Leavitt teaches the use of wireless communications provide real time connectivity to fleet operations (page 75 column 1 para 2).

Leavitt and Muralidharan both address the optimization and improvement of the shipping of freight, thus both Leavitt and Muralidharan are analogous art.

One of ordinary skill in the art would modify the teachings of Muralidharan, regarding obtaining information from a specific trailer noting the position of the trailer and the available capacity on the trailer, both in terms of weight and freight, to include the teachings of Leavitt, regarding providing the mobile wireless computing technology (including barcoding) to provide information from the truck including regarding it's position, because it would improve the operation of a trucking network by enhancing the real time dynamic decision tool taught by Muralidharan regarding optimizing a shipping network.

Regarding **Claim 19**, as noted above, both Muralidharan and Leavitt both teach

the use of a positioner that is a GPS receiver.

Regarding **Claim 20**, Muralidharan teaches the computing of excess capacity based on the weight and volume of an LTL trailer and the bills (i.e. pieces of LTL freight), as noted in **claim 9**.

Muralidharan teaches the need to obtain dynamic information from an LTL carrier because this information can improve the managing and optimization of an LTL network (page 1 line 1-7).

Muralidharan does not teach where the computer (i.e. the portable device) computes this information from the freight items scanned into the computer.

Leavitt teaches that providing a computer with wireless connection to a network provides for improved communication with the truck so that dynamic position information and other information can be received from the truck. Leavitt teaches that this information includes using a scanner to scan and transmit information.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Muralidharan, regarding computing excess capacity based on the weight and volume capacity of a truck and the associated pieces of freight the truck is carrying, to include where this information comes from the truck's wirelessly

connected scanner, as taught by Leavitt, because Muralidharan teaches that obtaining dynamic information from a truck in an LTL network helps optimize that network, and Leavitt teaches that providing trucks with wireless applications provides real-time information about all aspects of the truck (including the load – see page 75 column 1 para 2). There is a reasonable expectation of success in combining Muralidharan with Leavitt because it would enable the real-time, dynamic optimization of a freight network by receiving load information from a truck through the wireless computing, positioning and scanning hardware taught by Leavitt.

Regarding **Claim 21**, Muralidharan teaches the need to obtain capacity attributes but does not teach prompting users to enter capacity attributes.

Muralidharan teaches the need to obtain dynamic information from an LTL carrier because this information can improve the managing and optimization of an LTL network (page 1 line 1-7).

Leavitt teaches the need to prompt users to enter information (page 76 column 3 para 2).

Leavitt teaches that providing a computer with wireless connection to a network provides for improved communication with the truck so that dynamic position information and other information can be received from the truck.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Muralidharan, regarding computing excess capacity based on the weight and volume capacity of a truck and the associated pieces of freight the truck is carrying, to include where this information comes when prompted by the user to enter it, because Muralidharan teaches that obtaining dynamic information from a truck in an LTL network helps optimize that network, and Leavitt teaches that providing trucks with wireless applications provides real-time information about all aspects of the truck (including the load – see page 75 column 1 para 2) and that users can be prompted via messaging to enter information about their truck. There is a reasonable expectation of success in combining Muralidharan with Leavitt because it would enable the real-time, dynamic optimization of a freight network by receiving load information from a truck through the wireless communication hardware taught by Leavitt.

Regarding **Claim 22**, Muralidharan teaches:

selecting one of the matching mobile carrier entities to perform a particular one of the freight haulage jobs.

Page 29 line 9-13, a particular trailer (i.e. a job candidate) is selected to handle a particular job (i.e. a freight bill).

Regarding **Claim 23**, Muralidharan does not teach:

receiving respective haulage rates from ones of the mobile carrier entities, wherein the selecting is based at least in part on the received haulage rates.

Page 35 para 3.5 line 1-3, the selection of trailers is based at least in part based on their cost (i.e. their rate) and the effect that selection has (based on a host of other factors as well) has on the overall system cost. – see also page 52 line 20, the cost of an individual trailer is based on the cost of its routing (i.e. a haulage rate for that individual trailer).

See also page 32 line 9-10, the carrying capacity of a trailer is it's haulage rate, since less full trailers can carry more than empty ones. If a trailer is nearly full, then it's haulage rate is low, and it would not be selected for carrying a large amount of cargo.

Regarding **Claim 24**, Muralidharan teaches:

wherein the excess capacity information is expressed in terms of volume and weight available on respective ones of the mobile carrier entities.

Page 32 line 14-19, the excess capacity information is expressed in terms of the total volume and weight available on the individual trailer.

Conclusion

16. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

5835716 by Hunt discloses a method for brokering capacity information in a logistics network.

7243074 by Pennisi discloses a capacity monitoring system for a goods delivery process.

7222081 by Sone discloses a continuous scheduling method for delivery notification.

6701299 by Kraiser discloses a real time delivery analysis system.

5265006 by Asthana discloses a partial load planning system for the transportation industry.

5157714 by Spleer discloses a method for collecting and disseminating available load information for the trucking industry.

Dynamic and stochastic models with freight distribution applications

by Kleywegt, Anton Jan, Ph.D., Purdue University, 1996, 222 pages; AAT 9713537

Business Editors, "CargoReservations.com Launches Real-time B2B Exchange for Air Cargo Industry; Open System Created to Increase Fleet Utilization, Fill Excess Capacity, Reduce Unit Costs", Business Wire, Oct 12, 2000

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan G. Sterrett whose telephone number is 571-272-6881. The examiner can normally be reached on 8-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tariq Hafiz can be reached on 571-272-6729. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JGS 11-10-2007 JGS

Romain Jeanty
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PRIMARY EXAMINER
Art Unit 3623